

WHAT IS CLAIMED IS:

1. A damper mechanism comprising:
  - a first rotary member;
  - a second rotary member being configured to rotate relative to said first rotary
  - 5 member;
  - a damper section being configured to couple elastically said first rotary
  - member and said second rotary member together in a rotational direction;
  - a friction mechanism being configured to generate friction when said first
  - rotary member and said second rotary member rotate relative to each other;
  - 10 a friction suppressing mechanism being configured to prevent said friction
  - mechanism from operating within a prescribed angular range; and
  - an elastic member being configured to soften the impact between members
  - that contact each other at an end of said prescribed angular range.
- 15 2. The damper mechanism according to claim 1, wherein said elastic
- member is arranged to be compressed in the rotational direction within said prescribed
- angular range.
3. The damper mechanism according to claim 2, wherein
- 20 said friction suppressing mechanism has two members aligned in the rotational
- direction and
- said elastic member is disposed rotationally between said two members.
4. The damper mechanism according to claim 3, wherein

said two members comprise a first plate-like member having a hole formed therein and a second member being arranged within said hole such that said second member can move in the rotational direction, and

said elastic member is arranged inside said hole in rotational alignment with  
5 said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

5. A damper mechanism according to claim 4, wherein  
said two members comprise a plurality of internal teeth and a plurality of  
10 external teeth, said plurality of external teeth is arranged to have a rotational gap with respect to said plurality of internal teeth and

said elastic member is disposed rotationally between said internal teeth and said external teeth.

15 6. A damper mechanism according to claim 3, wherein  
said two members comprise a plurality of internal teeth and a plurality of external teeth, said plurality of external teeth is arranged to have a rotational gap with respect to said plurality of internal teeth and

said elastic member is disposed rotationally between said internal teeth and  
20 said external teeth.

7. The damper mechanism according to claim 1, wherein  
said friction suppressing mechanism has two members aligned in the rotational  
direction and  
25 said elastic member is disposed rotationally between said two members.

8. The damper mechanism according to claim 7, wherein  
said two members comprise a first plate-like member having a hole formed  
therein and a second member being arranged within said hole such that said second  
5 member can move in the rotational direction, and  
said elastic member is arranged inside said hole in rotational alignment with  
said second member, said elastic member is configured to be compressed between  
said second member and an edge of said hole.

10 9. A damper mechanism according to claim 8, wherein  
said two members comprise a plurality of internal teeth and a plurality of  
external teeth, said plurality of external teeth is arranged to have a rotational gap with  
respect to said plurality of internal teeth and  
said elastic member is disposed rotationally between said internal teeth and  
15 said external teeth.

10. A damper mechanism according to claim 7, wherein  
said two members comprise a plurality of internal teeth and a plurality of  
external teeth, said plurality of external teeth is arranged to have a rotational gap with  
20 respect to said plurality of internal teeth and  
said elastic member is disposed rotationally between said internal teeth and  
said external teeth.

11. A clutch disk assembly being configured to transfer torque from an  
25 engine and dampen vibrations from a flywheel, the clutch disk assembly comprising:

an input rotary member;

an output rotary member being disposed to rotate relative to said input rotary member;

a damper mechanism having

5 a spring member being configured to couple rotationally said input rotary member and said output rotary member, and

a torsion characteristic having

a positive side corresponding to said input rotary member being twisted in a rotational drive direction with respect to said output rotary member,

10 a negative side corresponding to said input rotary member being twisted in a direction opposite said rotational drive direction with respect to said output rotary member,

a first stage, and

15 a second stage corresponding to said spring member being compressed, said second stage having a higher rigidity than said first stage, said second stage existing on both said positive side and said negative side;

a friction mechanism being configured to generate friction when said input rotary member and said output rotary member rotate relative to each other within said second stage and said spring member exerts an elastic force;

a friction suppressing mechanism being configured to secure a rotational gap in said second stage, said friction suppressing mechanism being configured to prevent said elastic force of said spring member from acting on said friction mechanism

25 within a prescribed angular range; and

an elastic member being configured to soften the impact between members that contact each other at an end of said prescribed angular range.

12. The clutch disk assembly according to claim 11, wherein said elastic  
5 member is arranged to be compressed in the rotational direction within said prescribed angular range.

13. The clutch disk assembly according to claim 12, wherein  
said friction suppressing mechanism has two members aligned in the rotational  
10 direction and  
said elastic member is disposed rotationally between said two members.

14. The clutch disk assembly according to claim 13, wherein  
said two members comprise a first plate-like member having a hole formed  
15 therein, said first plate-like member is arranged axially adjacent said input rotary member, and a second member being arranged within said hole such that said second member can move in the rotational direction relative to said first plate-like member, and

said elastic member is arranged inside said hole in rotational alignment with  
20 said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

15. The clutch disk assembly according to claim 14, wherein  
said input rotary member comprises a plurality of internal teeth and said  
25 output rotary member comprises a plurality of external teeth, said plurality of external

teeth is arranged to have a rotational gap with respect to said plurality of internal teeth  
and

said elastic member is disposed rotationally between said internal teeth and  
said external teeth.

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16. The clutch disk assembly according to claim 13, wherein  
said input rotary member comprises a plurality of internal teeth and said  
output rotary member comprises a plurality of external teeth, said plurality of external  
teeth is arranged to have a rotational gap with respect to said plurality of internal teeth  
and

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said elastic member is disposed rotationally between said internal teeth and  
said external teeth.

17. The clutch disk assembly according to claim 11, wherein  
said friction suppressing mechanism has two members aligned in the rotational  
direction and

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said elastic member is disposed rotationally between said two members.

18. The clutch disk assembly according to claim 17, wherein  
said two members comprise a first plate-like member having a hole formed  
therein, said first plate-like member is arranged axially adjacent said input rotary  
member, and a second member being arranged within said hole such that said second  
member can move in the rotational direction relative to said first plate-like member,  
and

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said elastic member is arranged inside said hole in rotational alignment with said second member, said elastic member is configured to be compressed between said second member and an edge of said hole.

- 5           19.     A clutch disk assembly according to claim 18, wherein  
              said input rotary member comprises a plurality of internal teeth and said  
              output rotary member comprises a plurality of external teeth, said plurality of external  
              teeth is arranged to have a rotational gap with respect to said plurality of internal teeth  
              and  
10           said elastic member is disposed rotationally between said internal teeth and  
              said external teeth.

20.     A clutch disk assembly according to claim 17, wherein  
              said input rotary member comprises a plurality of internal teeth and said  
15           output rotary member comprises a plurality of external teeth, said plurality of external  
              teeth is arranged to have a rotational gap with respect to said plurality of internal teeth  
              and  
              said elastic member is disposed rotationally between said internal teeth and  
              said external teeth.